

AMENDMENTS TO THE CLAIMS

Claims 1, 3 and 5-48 are pending in this application. Claims 12, 28-31, 33 and 41-44 have been cancelled. Claims 1, 3, 5, 7-11, 13-27, 32, 34-40 and 45-48 have been amended.

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) The An image-scanning apparatus according to claim 17, wherein
comprising:

~~a light source for emitting visible light and invisible light;~~

~~scanning means for scanning an original image irradiated with light emitted by~~

~~said light source; and~~

~~control means for controlling said scanning means~~ said controller controls said

scanning unit to scan the original image irradiated with the invisible light, and then to scan the original image irradiated with the visible light, and

wherein when the original image is irradiated with the visible light, the original image is scanned in a rough scan for roughly scanning the original image, and in a fine scan for scanning the original image under a required condition on the basis of information scanned in the rough scan.

2. (Cancelled)

3. (Currently Amended) The apparatus according to claim 1, wherein said controller control
~~means~~ controls said scanning unit ~~means~~ to make the rough scan after said scanning unit ~~means~~
scans the original image irradiated with the invisible light, and then to make the fine scan.

4. (Cancelled)

5. (Currently Amended) The apparatus according to claim 17 ~~4~~, further comprising a detection
unit adapted to detect ~~means for detecting~~ abnormality on an original by scanning the original
image irradiated with the invisible light.

6. (Original) The apparatus according to claim 5, wherein the abnormality on the original is
caused by dust or scratches on the original.

7. (Currently Amended) The apparatus according to claim 5, further comprising a signal
processing unit adapted to ~~means for~~, when said detection unit ~~means~~ detects the abnormality,
execute ~~executing~~ signal processing for correcting an influence of the abnormality from the
image signal output from said scanning unit ~~means~~.

8. (Currently Amended) The apparatus according to claim 17 ~~4~~, wherein the invisible light is
infrared light.

9. (Currently Amended) The method according to claim 22, wherein ~~An image scanning method~~
~~comprising:~~

~~the scanning step of scanning, by scanning means, an original image irradiated~~
~~with light emitted by a light source which emits visible light and invisible light; and~~

~~the control step of controlling said scanning means to scan~~ said scanning step scans the original image irradiated with the invisible light, and then ~~scans to scan~~ scans the original image irradiated with the visible light, and

wherein when the original image is irradiated with the visible light, the original image is scanned in a rough scan for roughly scanning the original image, and in a fine scan for scanning the original image under a required condition on the basis of information scanned in the rough scan.

10. (Currently Amended) The storage medium according to claim 24, wherein A storage medium storing a computer program for scanning image information of a transparent original, said computer program including:

~~a code of the step of scanning the image information by irradiating the transparent original with invisible light;~~

~~a code of the step of then scanning the image information by irradiating the transparent original with visible light; and~~ said scanning step scans the original image irradiated with the invisible light, and then scans the original image irradiated with the visible light, and

wherein when the original image is irradiated with the visible light, the original image is scanned in a rough scan for roughly scanning the original image, and in a fine scan for scanning the original image ~~a code of the step of then performing a rough scan for roughly scanning the image information, and then a fine scan for scanning the image information under a required condition on the basis of information scanned in the rough scan.~~

11. (Currently Amended) The apparatus according to claim 17, further comprising ~~An image scanning apparatus for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and photodetection means for detecting light transmitted through the transparent original, comprising:~~

a moving unit adapted to make a reciprocal motion between the transparent original and said scanning unit, and wherein

~~emission means for emitting light in a first wavelength range and light in a second wavelength range with respect to the transparent original; and~~

~~control means for controlling~~ said controller controls said scanning unit to scan the transparent original image information from the transparent original by the light in the first wavelength range irradiated with the visible light in a motion in one direction of the reciprocal motion, and to scan the transparent original image information from the transparent original by the light in the second wavelength range irradiated with the invisible light in a motion in the other direction of the reciprocal motion.

12. (Cancelled)

13. (Currently Amended) The apparatus according to claim 11, wherein said control unit ~~means~~ controls to scan the original image information from the transparent original by a rough scan for obtaining a rough image information of the transparent original by visible light, a fine scan for obtaining an image information of the transparent original by visible light with designated image quality, or an infrared light scan for obtaining an image information of the transparent original by infrared light.

14. (Currently Amended) The apparatus according to claim 13, wherein said ~~controller control~~ means controls to make the infrared light scan in one of two reciprocal motions for respectively making the rough scan and fine scan.

15. (Currently Amended) The apparatus according to claim 14, wherein said ~~controller control~~ means controls to make the infrared light scan in the motion in one direction of the reciprocal motion for making the rough scan.

16. (Currently Amended) The apparatus according to claim 14, wherein said ~~controller control~~ means controls to make the infrared light scan in the motion in one direction of the reciprocal motion for making the fine scan.

17. (Currently Amended) An image scanning apparatus ~~for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and optical detection means for detecting light transmitted through the transparent original~~, comprising:

a light source adapted to emit visible light and invisible light;

a scanning unit adapted to scan a transparent original image irradiated with light emitted by said light source; and

a controller adapted to control said light source and the scanning unit,

~~emission means for emitting light in a first wavelength range and light in a second wavelength range with respect to the transparent original; and~~

~~control means for controlling to scan image information from the transparent original,~~

wherein an operation mode that skips a scan of the transparent original image irradiated with the invisible light before or after executing a scan of the transparent original image irradiated with the visible light ~~for image information by the light in the second wavelength range upon scanning the image information of the transparent original~~ is selectable.

18. (Currently Amended) The apparatus according to claim 11, further comprising a light-shielding unit means, placed on a light incoming side of said scanning unit ~~the photodetection means~~, adapted to cut for cutting the invisible light in the second wavelength range, and wherein said controller control means controls said light-shielding unit means to be retractable from a position on an optical axis.

19. (Currently Amended) The apparatus according to claim 11, further comprising a physical device which is placed on a light incoming side of said scanning unit ~~the photodetection means~~, and can control transmittances of the visible light in the first wavelength range and the invisible light in the second wavelength range, and wherein said controller control means controls spectral transmission characteristics of said physical device.

20. (Currently Amended) The apparatus according to claim 11, wherein said light source emission means comprises a first emission section for emitting the visible light in the first wavelength range, and a second emission section for emitting the invisible light in the second wavelength range, and said controller control means controls to turn on/off said first and second emission sections of said light source emission means.

21. (Currently Amended) The method according to claim 22, wherein ~~An image scanning method applied to an image scanning apparatus for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and photodetection means for detecting light transmitted through the transparent original, comprising:~~

~~the emission step of emitting light in a first wavelength range and light in a second wavelength range with respect to the transparent original; and~~

~~said scanning step is performed by a reciprocal motion between the transparent original and a scanning unit adapted to scan the transparent original image irradiated with light emitted by the light source, and~~

~~wherein said scanning step scans the transparent original image irradiated with the visible light the control step of controlling to scan image information from the transparent original by the light in the first wavelength range in a motion in one direction of the reciprocal motion, and scans the transparent original image irradiated with the invisible light to scan image information from the transparent original by the light in the second wavelength range in a motion in the other direction of the reciprocal motion.~~

22. (Currently Amended) ~~An image scanning method applied to an image scanning apparatus for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and photodetection means for detecting light transmitted through the transparent original, comprising:~~

~~the emission step of emitting light by a light source adapted to emit visible light and invisible light; light in a first wavelength range and light in a second wavelength range with respect to the transparent original; and~~

the scanning step of scanning a transparent original image irradiated with light emitted by the light source,

the control step of controlling to scan image information from the transparent original,

wherein an operation mode that skips a scan of the transparent original image irradiated with the invisible light before or after executing a scan of the transparent original image irradiated with the visible light for image information by the light in the second wavelength range upon scanning the image information of the transparent original is selectable.

23. (Currently Amended) The storage medium according to claim 24, wherein A computer readable storage medium, which stores a program for implementing an image scanning method applied to an image scanning apparatus for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and photodetection means for detecting light transmitted through the transparent original,

said image scanning method having the emission step of emitting light in a first wavelength range and light in a second wavelength range with respect to the transparent original, and the control step of controlling to scan image information from the transparent original by the light in the first wavelength range

said scanning step is performed by a reciprocal motion between the transparent original and a scanning unit adapted to scan the transparent original image irradiated with light emitted by the light source, and

wherein said scanning step scans the transparent original image irradiated with the visible light in a motion in one direction of the reciprocal motion, and scans the transparent

~~original image irradiated with the invisible light to scan image information from the transparent original by the light in the second wavelength range in a motion in the other direction of the reciprocal motion.~~

24. (Currently Amended) A computer readable storage medium, which stores a program for implementing an image scanning method ~~applied to an image scanning apparatus for scanning image information of a transparent original by a relative reciprocal motion between the transparent original and photodetection means for detecting light transmitted through the transparent original,~~

said image scanning method having the emission step of emitting light by a light source adapted to emit visible light and invisible light; light in a first wavelength range and light in a second wavelength range with respect to the transparent original, and the scanning step of scanning a transparent original image irradiated with light emitted by the light source, the control step of ~~controlling to scan image information from the transparent original,~~ wherein an operation mode that skips a scan of the transparent original image irradiated with the invisible light before or after executing a scan of the transparent original image irradiated with the visible light for image information by the light in the second wavelength range upon scanning the image information of the transparent original is selectable.

25. (Currently Amended) The apparatus according to claim 17, wherein ~~An image scanning apparatus for scanning image information on an original by a relative reciprocal motion between the original and a line sensor, comprising:~~

~~scan means for making~~ said scanning unit makes three types of scans including a rough scan for scanning the original image ~~information by irradiated with the~~ visible light at a low resolution, a fine scan for scanning the original image ~~information by irradiated with the~~ visible light at a high resolution, and an invisible light scan for scanning the original image ~~information by irradiated with the~~ invisible light, and

wherein said scanning unit ~~scan means~~ makes the invisible light scan at a lower resolution than the fine scan.

26. (Currently Amended) The apparatus according to claim 17 ~~25~~, wherein the invisible light scan is to scan dust or scratch information on the original.

27. (Currently Amended) The apparatus according to claim 11 ~~25~~, wherein said scanning unit ~~scan means~~ makes the rough scan in a motion in one direction of the reciprocal motion, and makes the invisible light scan in a motion in the other direction of the reciprocal motion.

28.-31. (Cancelled)

32. (Currently Amended) The apparatus according to claim 17 ~~25~~, wherein the original is a film original.

33. (Cancelled)

34. (Currently Amended) The method according to claim 22, wherein said scanning step includes: ~~An image scanning method for scanning image information on an original, comprising:~~

the rough scan step of scanning the original image ~~information by irradiated with~~ the visible light at a low resolution;

the fine scan step of scanning the original image ~~information by irradiated with~~
visible light at a high resolution;

the invisible scan step of scanning the original image ~~information by irradiated~~
with the invisible light at a lower resolution than the resolution in the fine scan step.

35. (Currently Amended) The storage medium according to claim 24, wherein said scanning
step includes: ~~A storage medium storing a computer program for scanning image information on~~
~~an original, said computer program including:~~

~~a code of the rough scan step of scanning the original image ~~information by~~~~
~~irradiated with the visible light at a low resolution;~~

~~a code of the fine scan step of scanning the original image ~~information by~~~~
~~irradiated with the visible light at a high resolution; and~~

~~a code of the invisible scan step of scanning the original image ~~information by~~~~
~~irradiated with the invisible light at a lower resolution than the resolution in the fine scan step.~~

36. (Currently Amended) The apparatus according to claim 17, wherein ~~An image scanning~~
~~apparatus for scanning image information on an original by a scan attained by a relative motion~~
~~between the original and a line sensor, comprising:~~

~~emission means for emitting visible light and invisible light; and~~

~~scan means for making~~ said scanning unit makes two types of scans including a
visible light scan for scanning the original image ~~information by irradiated with the~~ visible light,
and an invisible light scan for scanning the original image ~~information by irradiated with the~~
invisible light, and

wherein said scanning unit ~~scan means~~ completes the invisible light scan within a shorter period of time than the visible light scan.

37. (Currently Amended) The apparatus according to claim 17, wherein ~~An image scanning apparatus for scanning image information on an original by a scan attained by a relative motion between the original and a line sensor, comprising:~~

~~emission means for emitting visible light and invisible light; and~~

~~scan means for making~~ said scanning unit makes two types of scans including a visible light scan for scanning the original image ~~information by irradiated with~~ visible light, and an invisible light scan for scanning the original image ~~information by irradiated with~~ invisible light, and

wherein said scanning unit ~~scan means~~ makes the invisible light scan ~~by a relative motion~~ at a higher speed than ~~a relative motion for~~ the visible light scan.

38. (Currently Amended) The apparatus according to claim 36, wherein an output signal level of said scanning unit ~~the line sensor~~ in the invisible light scan is lower than an output signal level in the visible light scan.

39. (Currently Amended) The apparatus according to claim 36, wherein spectral intensity characteristics of said light source ~~emission means~~ have a higher emission intensity in the ~~an~~ invisible light ~~wavelength range~~ than an emission intensity in the ~~a~~ visible light ~~wavelength range~~.

40. (Currently Amended) The apparatus according to claim 36, wherein spectral sensitivity characteristics of said scanning unit ~~the line sensor~~ have a higher sensitivity in the an invisible light wavelength range than a sensitivity in the a visible light wavelength range.

41.-44. (Cancelled).

45. (Currently Amended) The method according to claim 22, wherein said scanning step includes: An image scanning method for scanning image information on an original by a scan attained by a relative motion between the original and a line sensor, comprising:

the visible light scan step of scanning the original image irradiated with the
~~making a scan by the relative motion using~~ visible light; and

the invisible light scan step of scanning the original image irradiated with the
~~making a scan using~~ invisible light within a shorter period of time than the visible light scan step.

46. (Currently Amended) The method according to claim 22, wherein said scanning step includes: An image scanning method for scanning image information on an original by a scan attained by a relative motion between the original and a line sensor, comprising:

the visible light scan step of scanning the original image irradiated with the
~~making a scan by the relative motion using~~ visible light; and

the invisible light scan step of scanning the original image irradiated with the
~~making a scan using~~ invisible light ~~by a relative motion~~ at higher speed than ~~a relative motion for~~ the visible light scan step.

47. (Currently Amended) The storage medium according to claim 24, wherein said scanning step includes: ~~A storage medium storing a computer program for scanning image information on an original by a scan attained by a relative motion between the original and a line sensor, said computer program including:~~

~~a code of the visible light scan step of~~ scanning the original image irradiated with the making a scan by the relative motion using visible light; and

~~a code of the invisible light scan step of~~ scanning the original image irradiated with the making a scan using invisible light within a shorter period of time than the visible light scan step.

48. (Currently Amended) The A storage medium according to claim 24, wherein said scanning step includes: ~~storing a computer program for scanning image information on an original by a scan attained by a relative motion between the original and a line sensor, said computer program including:~~

~~a code of the visible light scan step of~~ scanning the original image irradiated with the making a scan by the relative motion using visible light; and

~~a code of the invisible light scan step of~~ scanning the original image irradiated with the making a scan by the relative motion using invisible light ~~by a relative motion~~ at higher speed than ~~a relative motion~~ for the visible light scan step.